

REMARKS

I. Preliminary Matters

In a telephone conversation on March 14, 2011, Examiner Han informed the undersigned that due to the inadvertent discrepancy in the status of the Office Action, as indicated in the Office Action Summary and the Detailed Action of the Office Action dated March 2, 2011, the Office Action in question would be considered to be a **Non-Final** Office Action.

Accordingly, Applicants are filing a Response under 37 C.F.R. § 1.111 in response to the Office Action dated March 2, 2011.

II. Status of Claims

Claims 1, 3, 4, 6, 7, 9 and 10-43 are pending in the application. Claims 11-32 and 34 are withdrawn from consideration, and Claims 1, 3, 4, 6, 7, 9, 10, 33 and 35-43 are rejected.

III. Response to Claim Rejections Under 35 U.S.C. § 103(a)

A. Claims 1, 6, 9, 10, 33 and 35-39 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ono (JP 2003-157914) in view of Wang et al. (J. Am. Chem. Soc. 2003, 125, 1166-67).

B. Claims 3 and 4 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ono and Wang as applied to Claim 1, and further in view of Ono.

C. Claims 7 and 42 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ono and Wang as applied to Claim 6, and further in view of Smalley et al. (U.S. Patent No. 7,074,310; hereafter “Smalley I”).

D. Claims 40 and 41 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Ono and Wang as applied to Claim 6, and further in view of Tanaka et al. (U.S. Patent Application Publication No. 2003/0179537).

E. Claim 42 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Ono, Wang and Smalley I as applied to Claim 7, and further in view of Smalley et al. (U.S. Patent Application Publication No. 2002/0085968; hereafter “Smalley II”).

Applicants respectfully traverse, at least for the following reasons.

Claim 1 is directed to a photoelectric conversion element comprising an electrolyte composition, wherein the electrolyte composition comprises an ionic liquid and conductive particles. The electrolyte composition is in the form of a gel by the action of the conductive particles, and the conductive particles comprise a material containing carbon as a main component. The photoelectric conversion elements as claimed in independent Claims 9 and 10 also include the limitation that the electrolyte composition is in the form of a gel by the action of the conductive particles.

At page 2 of the Office Action, the Examiner admits that Ono is silent about forming a gel by the action of the conductive particles. The Examiner relies on Wang to teach that photovoltaic devices with submicron sized particles including graphite particles and that nanoparticles have shown to be effective as a “gelator” to solidify ionic liquids. In response to Applicants’ previously filed arguments, at pages 7 and 8 of the Office Action, the Examiner states that Wang recognizes that a photoelectric device with submicron sized particles, including graphite particles, can act as a gelator.

Applicants respectfully disagree with the Examiner’s characterization of Wang, at least for the following reason.

Applicants respectfully submit that Wang fails to teach that the submicron sized particles including graphite particles can act as a gelator.

Wang et al. discloses that

submicrometer-sized anatase and graphite particles can be dispersed in this high ionic strength media to form stable colloidal solutions¹¹

Page 1166, col. 1, ll. 31-33. Namely, Wang relies on reference 11 (Kosmulski, M, Janusz, W. J. *J. Colloid Interface Sci.* 2001, 242, 104-105) to teach the above-discussed elements.

Applicants studied Reference 11 cited in Wang. Reference 11 discloses a submicrometer-sized anatase particles with a particle diameter of 100-500 nm. Reference 11 fails to teach the detailed particle diameter of graphite particles. Based on the disclosure in Reference 11, the term “submicrometer-sized” in reference 11 can be considered to be a particle diameter of 100-500 nm. In comparison, silica particles used as nanopartilces in Wang have a particle diameter of 12 nm, which is far smaller than the submicrometer-size particle diameter of 100-500 nm as disclosed in Reference 11. Therefore, the definition of the term of “nanoparticles” in Wang differs from the definition of the term “submicrometer-sized” in Reference 11.

Additionally, Wang only discloses that silica nanopartilces may be effective as a gelator. However, Wang fails to disclose that submicrometer-sized graphite particles are also effective as a gelator.

In view of the above, a person of ordinary skill in the art would not have been motivated to combine the teachings of Ono and Wang to arrive at the presently claimed invention with a reasonable expectation of success. None of Smalley I, Smalley II and Tanaka cures the above-discussed deficiency in the combination of Ono and Wang with respect to Claims 1, 9 and 10. Therefore, Claims 1, 9 and 10, and dependent claims thereon, are patentable.

Accordingly, Applicants respectfully request reconsideration and withdrawal of the § 103(a) rejections of Claims 1, 3, 4, 6, 7, 9, 10, 33 and 35-43.

Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,



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